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BETZ LABORATORIES, INC.
GENERAL OFFICES | ENGINEERING HEADQUARTERS
GILLINGHAM & WORTH STREETS, PHILADELPHIA 24, PA.

CONSULTANTS ON INDUSTRIAL WATER PROBLEMS

February 29, 1960

Milford Rivet and Machine Company
Penn Division
Hatboro, Pennsylvania

Attention: Mr. Wesley Benzee
General Manager

RE: Supervisory Contract
Industrial Waste
Treatment Plant

Gentlemen:

In accordance with the subject contract, the writer visited your Hatboro plant on February 15, 1960 and reviewed operating conditions at the Industrial Waste Plant. Discussions were held with operating and supervising personnel in order to obtain full information regarding the operations and happenings during the previous month.

It was reported by the operator that additional flows had been experienced and that is has been necessary to treat at least four tanks daily. This has caused some difficulty, particularly in extreme cold weather when it is impossible to use the exterior tanks. However, your operator was urged to use these tanks whenever possible in order to provide more flexibility and greater capacity and ultimately keep the lagoon levels down.

At the time of the visit the lagoons were rather high in level and slight modifications in treatment were provided in order that these completely settled wastes could be more rapidly handled. This was an expedient for which the writer approved however, it is not to be repeated unless sanctioned by the writer.

Samples were collected and inspected of the several batches treated during the month. Several were retained for examination and the results of these are on the attached report. Actually, on one set collected February 3 there was no cyanide present in either the raw or the treated sample. On the sample collected February 11, 1.8 ppm cyanide existed in the raw and this was completely destroyed.

On the composited sample, which included portions of all batches, "zero" cyanide was found in all cases.

On part of the samples, excellent clarification was obtained while on others the clarification was little more than satisfactory. Actually, we are aware that there is some after-precipitation possible on the samples that are retained for a length of time. This is not particularly significant.

On the sample of lagoon water that was collected, we found approximately 0.6 ppm of cyanide present. We were pleased to find that this concentration was considerably under 1 ppm.

Your operator has indicated that no particular difficulties have been experienced in the several batches despite the fact that on some of them not more than two hours settling time was available. There is no question in the writer's mind, and this has been confirmed by your operator, that more efficient treatment is obtained since the stirring device for testing was installed.

There have been no complaints from the various authorities regarding the discharge of the treated wastes and we are pleased to report that the operations are generally satisfactory. We realize that superficial problems arise from time to time regarding interpretation or methods, however, we believe that by full cooperation of all a continuously satisfactory effluent can be prepared. We appreciate your cooperation and we assure you of our continuing interest and full cooperation on any problems that arise.

Respectfully submitted,

BETZ LABORATORIES, INC.

Max U. Priester

Max U. Priester
Co-Director
Consulting Services

MUP/ech
cc: + 3
Enc.

MUP,

Analyses

BETZ LABORATORIES, INC.
PHILADELPHIA 24, PA.

Rivet and Machine Company
[illegible], Pennsylvania

rec'd.
sample ~~date~~ 2-15-60

SAMPLING POINT	Composite Raw	Composite Treated	No. 2 Basin Raw 2-3	No. 2 Basin Treated 2-3	No. 3 Basin Raw 2-11	No. 3 Basin Treated 2-11
"P" Alkalinity as $CaCO_3$, ppm	12	0				
"M.O." Alkalinity as $CaCO_3$, ppm	442	224				
pH (Elect.)	8.42	8.10	8.08	7.98	8.30	7.56
Total Iron as Fe, ppm	3.0	0.7				
Cyanide as CN, ppm	0.0	0.0	0.0	0.0	1.3	0.0
Oil in ppm	54	22				
Suspended Solids, ppm	200	70	108	14	70	12

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FROM VT
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MUP/ech

Form 363T

Analyses

BETZ LABORATORIES, INC.
PHILADELPHIA 24, PA.

...n Rivet and Machine Company
...ro, Pennsylvania

rec'd.
sample ~~dated~~ 2-15-60

SAMPLING POINT	Lagoon					
Cyanide as CN, ppm	0.6					

MUP/ech

Form 363 T

BETZ LABORATORIES, INC.
GENERAL OFFICES | ENGINEERING HEADQUARTERS
GILLINGHAM & WORTH STREETS, PHILADELPHIA 24, PA.

CONSULTANTS ON INDUSTRIAL WATER PROBLEMS

January 29, 1960

Milford Rivet and Machine Company
Pin Division
Hatboro, Pennsylvania

Attention: Mr. Wesley Benzee,
General Manager

RE: Supervisory Contract
Industrial Waste Treatment
Plant

Gentlemen:

On January 18, 1960 the writer visited your Hatboro Plant in accordance with the subject contract for the purpose of reviewing operations and results obtained at the Industrial Waste Treatment Plant.

Discussions held with your operating and supervising personnel reveal that no major problems had occurred during the month and that reasonably satisfactory treatment was maintained.

A number of samples were observed and it was found that your operator had been able to obtain good clarification of the various mixed batches of waste to be treated. Portions of some were collected and delivered to our laboratory for analysis as well as an individual portion from all wastes treated. These samples have been examined and the results attached. Your review of these analytical data will show that complete reduction was obtained at all times of any cyanide resulting from mill processing and that suspended solids were satisfactorily reduced.

On the sample of composite treated waste, which consisted of a portion of all tanks treated during the month, we found a slight cloudiness due apparently to after precipitation although actual reduction of undesirables was complete. The oil content of the raw composite was not particularly high but was substantially reduced to only a few ppm indicating satisfactory treatment. It is our opinion that in the light of the results on the samples collected and observations of others that the waste being discharged to the Municipal Sewerage System complies with the requirements.

The volume of waste to be treated has increased somwhat with your operator presently treating four tanks a day. Due to the extreme cold weather he has been accomplishing this on the two inside or housed tanks.

We also note that the lagoon level is relatively high which is another reason for the stepped up schedule of treatment. The operator was urged to attempt to reduce the level in the lagoons to assure more flexibility in operation.

Your personnel advised the writer that an inspection has been made recently of the concentrated sulfuric acid storage tank existing in the waste treatment plant. Some difficulties had been experienced in obtaining acid from the tank due to apparent clogging. It is understood that you resorted to air to open the line and further investigation indicated substantial amounts of sludge in the tank. It is also your opinion, based on the examination that substantial corrosion has taken place inside the tank with the result that the wall thickness has been decreased. Although the writer did not examine this, you have deemed it advisable and decided to use up the acid which is presently in the tank and from that time on, due to the small amount of acid presently being used, that it will be purchased in 200 pound carboys. If the tank is in the condition as suspected, this is probably a wise move. However, at some time in the future it would be well to thoroughly clean and inspect the tank in case it is ever desirable to again put it into service. The tank should be cleaned, wire brushed and inspected and possibly painted for adequate protection.

In view of the over-all conditions found at your plant we believe that it is being operated satisfactorily. If questions arise we have requested that you contact this writer immediately in order to assure that a satisfactory effluent is being discharged at all times.

Respectfully submitted,

BETZ LABORATORIES, INC.

Max J. Priester
Co-Director
Consulting Services

MJP:kb
cc: 42
Enc.

ater analyses

BETZ LABORATORIES, INC.
PHILADELPHIA 24, PA.

R | Milford Rivet and Machine Company
Hatboro, Pennsylvania

sample dated xx Rec'd 1/13/60

SAMPLING POINT	Basin No. 1 Raw 12/2/59	Basin No. 1 Treated 12/23/59	Basin No. 1 Raw 1/11/60	Basin No. 1 Treated 1/13/60	Composite Raw	Composite Treated
Ammonia as N, ppm						
Carbon Dioxide as CO_2, ppm						
Total Hardness as $CaCO_3$, ppm						
Calcium as $CaCO_3$, ppm						
Magnesium as $CaCO_3$, ppm						
Phenolphthalein Alkalinity as $CaCO_3$, ppm					14	0
Methyl Orange Alkalinity as $CaCO_3$, ppm					[illegible]	240
Sulfate as SO_4, ppm						
Chloride as Cl, ppm						
Silica as SiO_2, ppm						
Total Phosphate as PO_4, ppm						
Ortho Phosphate as PO_4, ppm						
Sulfite as SO_3, ppm						
pH	8.22	8.12	7.72	7.47	8.45	8.32
Specific Conductance, micromhos						
Specific Conductance, micromhos (corrected)						
Nitrate as NO_3, ppm						
Total Iron as Fe, ppm					1.3	0.2
Cyanide as CN, ppm	3.49	0.0	0.00	0.0	1.74	0.0
Suspended Solids, ppm	100	20	100	20	224	74
Oil in ppm					52	15